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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,021	11/24/2003	Joon-ho Cha	1793.1110	9169

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STAAS & HALSEY LLP  
SUITE 700  
1201 NEW YORK AVENUE, N.W.  
WASHINGTON, DC 20005

EXAMINER

VAN ROY, TOD THOMAS

ART UNIT PAPER NUMBER

2828

DATE MAILED: 03/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/719,021

Applicant(s)

CHA ET AL.

Examiner

Tod T. Van Roy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4,6-10 and 15-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-10 and 15-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

The examiner acknowledges the cancellation of claims 5 and 11-14.

### ***Response to Arguments***

Applicant's arguments filed 01/20/2006 have been fully considered but they are not persuasive.

With respect to independent claims 1, 6, 15, 18, 22, and 26, and the claims dependent therefrom:

The applicant has argued that Spangler does not teach the ground connector to be longer than the active connector, pointing to portion of ground connector #10 and active pins #8 in figure 2.

The examiner does not agree with the applicant. The ground connector is found in both pieces of the total connecting device (fig.2 #2/3), and is shown in totality in fig.5 to be of a length substantially longer than that of pins #8 (pin #8 shown in fig.4 to make small "S" bend prior to terminating at input to internal connection, while the ground connector extends from the tip of #13 to near to the top of #3).

In addition, the cited passages of Spangler used in the previous office action refer to the teachings regarding the 2<sup>nd</sup>, insert able, connection piece #2 in figure 2. Spangler clearly describes the ground connector #10 protrudes further than the internal active connectors of #2 in order for the ground to make contact with the similarly labeled ground #10 of piece #3 prior to the contacts #7 of each connector are mated (col.4 lines 61-65). Spangler goes on to fully describe why this is done, and the advantage to

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having done so (col.4-5 lines 56-8). The examiner therefor believes that ground connector is both longer, and protrudes farther than the active connectors in the Spangler reference.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 1, and 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riazat et al. (US 2003/138008) in view of Spangler (US 5547385).

With respect to claim 1, Riazat teaches a laser diode (fig. 8 #814) comprising at least one active connector (fig.8 #810), a ground connector (fig.8 #808), wherein the active connector and ground connector protrude from the laser diode so as to be electrically connectable to a laser diode driving integrated circuit. Riazat does not teach

the ground pin to be longer than the active pin. Spangler teaches an electrical connector in which the ground pin is longer than the active pins (col.1 lines 56-64). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the laser diode connectors of Riazat with the ground connector length of Spangler in order to prevent electrostatic discharges (ESDs) from harming the various circuit elements (Spangler, col.1 lines 45-50).

With respect to claims 3 and 4, Riazat and Spangler teach the laser diode as outlined in the rejection to claim 1, and Riazat further teaches the active connector to comprise a first connector (fig.8 #810, laser diode) and second connector (fig.8 #824, photodiode).

Claims 2, and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riazat in view of Spangler, and further in view of Patrick, Jr. (US 3767971).

With respect to claim 2, Riazat and Spangler teach the laser diode as outlined in the rejection to claim 1, including the use of the ground connector for ESD protection, but do not teach the ground connection to be acutely shaped compared to the active connector. Patrick teaches an acutely shaped conductor which is used to facilitate ESD discharges (col.3 lines 10-15). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the laser diode ground connector of Riazat and Spangler, used for ESD protection, with the acute shape taught by Patrick in order to further attract the ESDs to the ground connector to protect the various circuit elements.

With respect to claim 15, Riazat teaches a laser diode comprising an active connector (fig.8 #810), and a ground connector (fig.8 #808). Riazat does not teach the ground connector to be longer and acutely shaped as compared to the active connector. Spangler teaches an electrical connector in which the ground pin is longer than the active pins (col.1 lines 56-64). Patrick teaches an acutely shaped conductor which is used to facilitate ESD discharges (col.3 lines 10-15). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the laser diode connectors of Riazat with the ground connector length of Spangler in order to prevent electrostatic discharges (ESDs) from harming the various circuit elements (Spangler, col.1 lines 45-50), as well as, to combine the laser diode ground connector of Riazat and Spangler, used for ESD protection, with the acute shape taught by Patrick in order to further attract the ESDs to the ground connector to protect the various circuit elements.

With respect to claims 16 and 17, Riazat, Patrick and Spangler teach the laser diode as outlined in the rejection to claim 15, and Riazat further teaches the active connector to comprise a first connector (fig.8 #810, laser diode) and second connector (fig.8 #824, photodiode).

Claims 6-7, and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riazat in view of Spangler, and further in view of Kjarsgard (US 3972356).

With respect to claim 6, Riazat and Spangler teach the laser diode as outlined in the rejection to claim 1, but do not teach the insertion of the leads into a printed circuit board (PCB). Kjarsgarrrd teaches a TO can which has its leads fixedly inserted into a circuit board (col.1 lines 24-30). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the laser diode of Riazat and Spangler with the PCB connection of Kjarsgarrrd in order to allow for easy integration of the diode into larger systems, as is well known and widely used in the art (Kjarsgarrrd, col.1 lines 14-15, fig.6. since the ground connector is longer, it would protrude further than the active connector).

With respect to claim 7, Riazat, Spangler and Kjarsgarrrd teach the laser diode and circuit board connection, and Kjarsgarrrd additionally teaches the use of solder for connecting the pins to the board (col.1 lines 28-30). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the laser diode and circuit board connection of Riazat, Spangler and Kjarsgarrrd with the solder connection of Kjarsgarrrd in order to make solid electrical connections of the board to the pins, as well as to provide stability to the to-can as it is fixed rigidly in place.

With respect to claims 9 and 10, Riazat, Kjarsgarrrd and Spangler teach the laser diode as outlined in the rejection to claim 15, and Riazat further teaches the active connector to comprise a first connector (fig.8 #810, laser diode) and second connector (fig.8 #824, photodiode).

Claims 8, and 18-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riazat in view of Spangler, Patrick, Jr., and Kjarsgarrrd.

With respect to claim 8, Riazat, Spangler, and Kjarsgarrrd teach the laser diode as outline in the rejection to claim 6, but do not teach the ground connector to be acutely shaped as compared to the active connector. Patrick teaches an acutely shaped conductor which is used to facilitate ESD discharges (col.3 lines 10-15). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the laser diode connectors of Riazat, Spangler, and Kjarsgarrrd with the acute shape taught by Patrick in order to further attract the ESDs to the ground connector to protect the various circuit elements.

With respect to claim 18, Riazat, Spangler, and Kjarsgarrrd teach the laser diode as outline in the rejection to claim 6, but do not teach the ground connector to be acutely shaped as compared to the active connector. Patrick teaches an acutely shaped conductor which is used to facilitate ESD discharges (col.3 lines 10-15). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the laser diode connectors of Riazat, Spangler, and Kjarsgarrrd with the acute shape taught by Patrick in order to further attract the ESDs to the ground connector to protect the various circuit elements.

With respect to claim 19, Riazat, Spangler, Patrick and Kjarsgarrrd teach the laser diode and circuit board connection of claim 18, and Kjarsgarrrd additionally teaches the use of solder for connecting the pins to the board (col.1 lines 28-30). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the



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laser diode and circuit board connection of Riaziat, Spangler, Patrick and Kjarsgarrrd with the solder connection of Kjarsgarrrd in order to make solid electrical connections of the board to the pins, as well as to provide stability to the to-can as it is fixed rigidly in place.

With respect to claims 20 and 21, Riaziat, Kjarsgarrrd, Patrick and Spangler teach the laser diode as outlined in the rejection to claim 15, and Riaziat further teaches the active connector to comprise a first connector (fig.8 #810, laser diode) and second connector (fig.8 #824, photodiode).

Claims 22-25 are rejected for the same reasons as stated in the rejections to claims 18-21 above.

With respect to claim 26, Riaziat, Kjarsgarrrd, Patrick, and Spangler teach a method of reducing malfunctions due to ESD of a laser diode insertable into a PCB that is connectable to a laser diode driving integrated circuit as taught in the rejection of claim 18 above, wherein "cutting" the connectors can at best be considered to be a product-by-process limitation and are not given patentable weight. See MPEP 2113.

Claims 27-28 are rejected for the same reasons as stated for the rejection of claim 19 above.

Claims 29-30 are rejected for the same reasons as stated for the rejection of claims 20-21.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

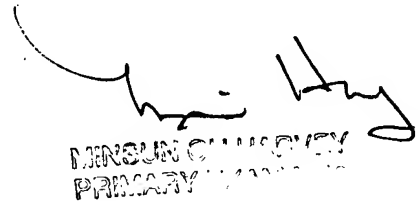
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tod T. Van Roy whose telephone number is (571)272-8447. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on (571)272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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